# Met Office 3-month Outlook

Period: January – March 2018  Issue date: 15.12.17

The forecast presented here is for January and the average of the January-February-March period for the United Kingdom as a whole. The forecast for January will be superseded by the long-range information on the public weather forecast web page (www.metoffice.gov.uk/public/weather/forecast/#?tab=regionalForecast), starting from 1 January 2018.

This forecast is based on information from observations, several numerical prediction systems and expert judgement.


**SUMMARY – TEMPERATURE:**

For January, above-average temperatures are slightly more likely than below-average temperatures. Weather patterns are likely to be changeable, suggesting a chance of cold weather during some parts of the month. For January-February-March as a whole, above-average temperatures are more likely than below-average temperatures. Impacts from cold weather remain possible, but they are less likely than normal.

Overall, the probability that the UK-average temperature for January-February-March will fall into the coldest of our five categories is between 10% and 15% and the probability that it will fall into the warmest of our five categories is between 35% and 40% (the 1981-2010 probability for each of these categories is 20%).


**CONTEXT:**

La Niña, the cold counterpart to El Niño, has become established in the Central and Eastern tropical Pacific Ocean. Long-range prediction systems indicate that it will persist throughout the period of this outlook. La Niña affects patterns of rainfall in the tropics, and in late winter these changes increase the chances of the positive phase of the North Atlantic Oscillation (NAO). Positive NAO increases the likelihood of weather patterns with winds from the west, leading to milder-than-average conditions.

The Madden-Julian Oscillation (MJO) is an area of enhanced thundery activity that moves eastwards through the tropics over a period of several weeks. It has recently been active and is currently in a location that frequently leads to a negative phase of the North Atlantic Oscillation about 10 days later. The negative phase of the NAO brings colder-than-average conditions to the UK, implying an increased chance of colder-than-average temperatures in early January.

The Quasi-Biennial Oscillation (QBO), an oscillation of the equatorial winds in the stratosphere, is in its easterly phase. An easterly phase of the QBO tends to increase the likelihood of a negative phase of the NAO, which in turn increases the chances of below-average temperatures.

For January, the Met Office long-range prediction system and systems from other prediction centres around the world show good agreement on an increased likelihood of cyclonic weather patterns over the North Atlantic and Northwest Europe. These patterns favour mild westerly winds, but also increase the chances of colder north or north-westerly winds, suggesting a changeable situation with a mix of conditions. For the month on average, higher-than-normal temperatures are slightly more likely than below-average temperatures (see left-hand graph of figure T2).

For January-February-March as whole, long-range forecast systems show good agreement on an increased chance of a positive NAO pattern. As a result, there is a higher-than-normal likelihood of above-average temperatures in the 3-month period (see right hand graph of figure T2). Significant cold weather impacts, such as from frost, fog and snow, are less likely than normal, although they remain possible.

Fig T1

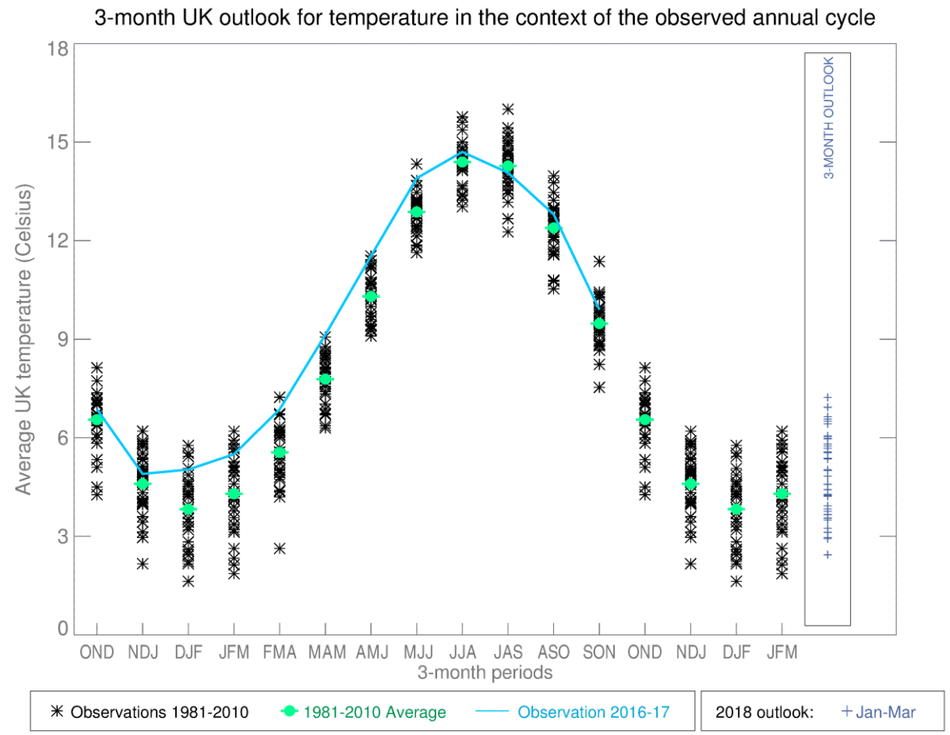

3-month UK outlook for temperature in the context of the observed annual cycle
Average UK temperature (Celsius)
3-month periods
OND NDJ DJF JFM FMA MAM AMJ MJJ JJA JAS ASO SON OND NDJ DJF JFM
3-MONTH OUTLOOK
Observations 1981-2010
1981-2010 Average
Observation 2016-17
2018 outlook: +Jan-Mar

Fig T2

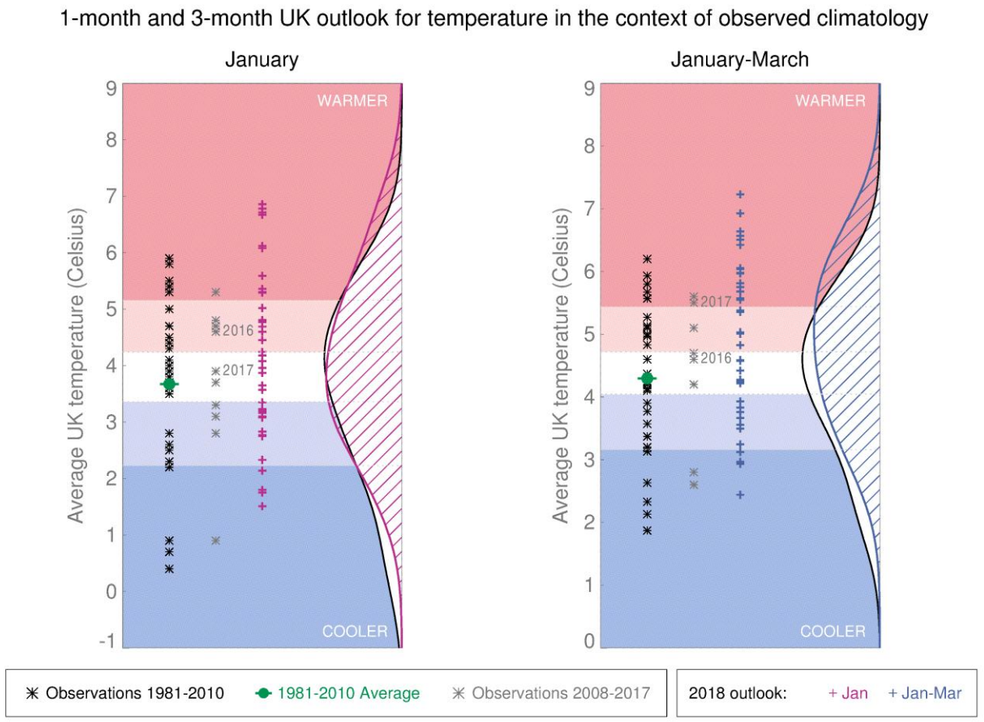
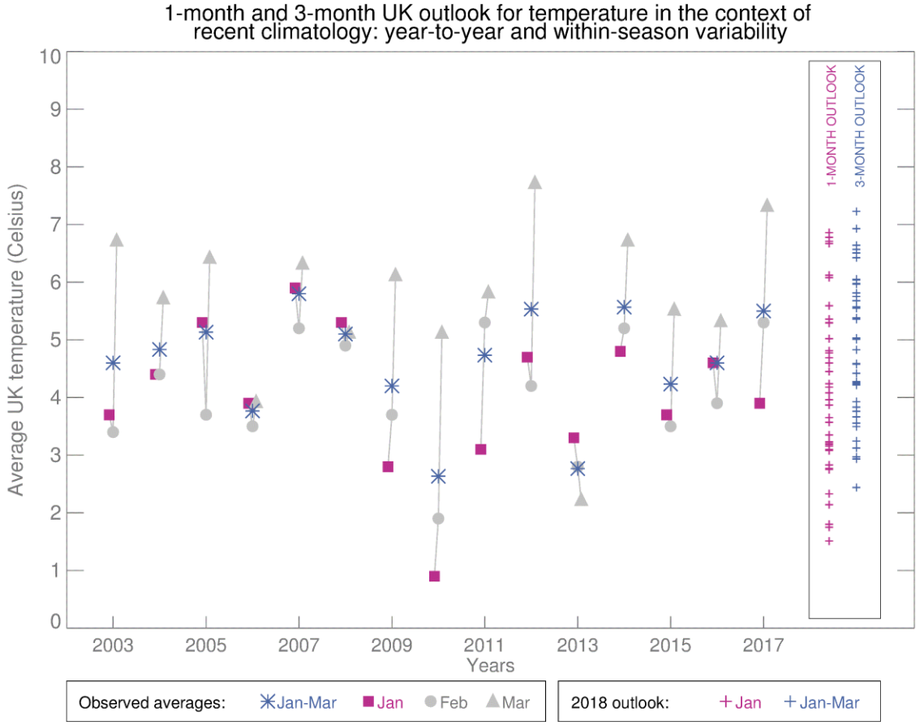



Fig T3


1-month and 3-month UK outlook for temperature in the context of recent climatology: year-to-year and within-season variability
Average UK temperature (Celsius)
Years
1-MONTH OUTLOOK
3-MONTH OUTLOOK
Observed averages: Jan-Mar Jan Feb Mar
2018 outlook: +Jan +Jan-Mar

This Outlook provides an indication of possible temperature and rainfall conditions over the next 3 months. It is part of a suite of forecasts designed for contingency planners.

The Outlook should not be used in isolation but should be used with shorter-range and more detailed (30-day, 15-day and 1-to-5-day) forecasts and warnings available to the contingency planning community from the Met Office.